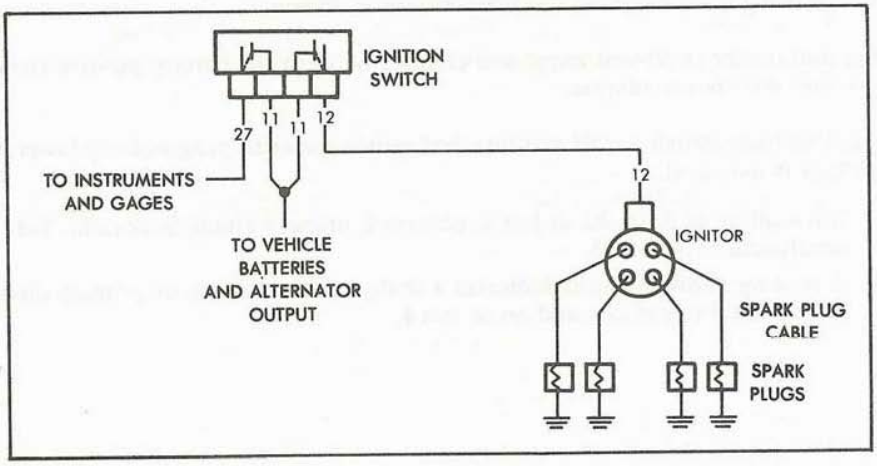
Table 3-5. Electrical Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

IGNITION SYSTEM



1. ENGINE WILL NOT START (standard and solid-state ignition)

NOTE

If STE/ICE is available, perform NG10 — engine crank — no start (chapter 3, section VI).

Test 1. Check fuel level.

Test 2. Secondary circuit voltage test.

Step 1. Remove spark plug cables from spark plugs.

Step 2. Position the spark plug cable ¼ inch from cylinder head and crank engine with ignition switch in ON position.

Step 3. Observe each cable in turn to see if spark jumps gap between cable and cylinder head.

a. If spark jumps gap, turn ignition to OFF position, remove plugs and clean or replace as necessary (para 4-15).

b. If no or weak spark is evident, turn ignition to OFF position and go to test 3.

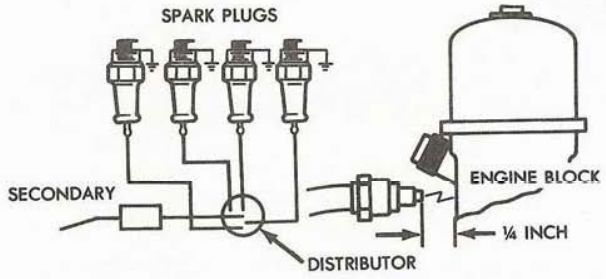


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Table 3-5. Electrical Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Test 3. Primary circuit resistance test.

Step 1. Install distributor adapters and jumper wire as shown.

Step 2. Set multimeter to 50-volt range and connect between the battery positive terminal and the primary distributor adapter.

Step 3. Turn ignition switch to ON position and switch meter to progressively lower settings until voltage is indicated.

a. If a reading of 0.2 volts or less is observed, primary circuit is normal. Test control module (malfunctions 2 and 3).

b. A reading above 0.2 volts indicates a faulty ignition switch or primary circuit. Turn ignition switch to OFF position and go to test 4.

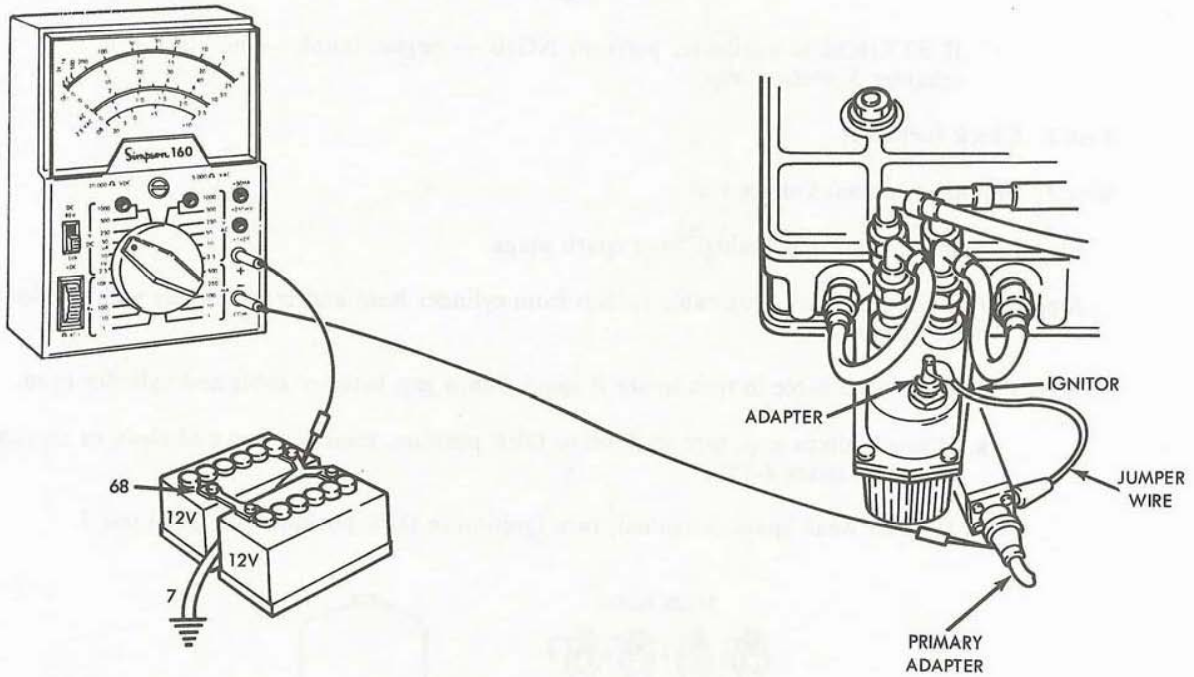

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Table 3-5. Electrical Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Test 4. Ignition switch voltage test.

Step 1. Set multimeter to 50-volt range, and connect negative lead to ground.

Step 2. Disconnect circuit 12 connector from ignition switch, and connect positive lead of multimeter to switch terminal.

Step 3. Turn ignition switch to ON, and observe multimeter.

Meter should indicate battery voltage. If no voltage, turn ignition switch OFF and go to test 5.

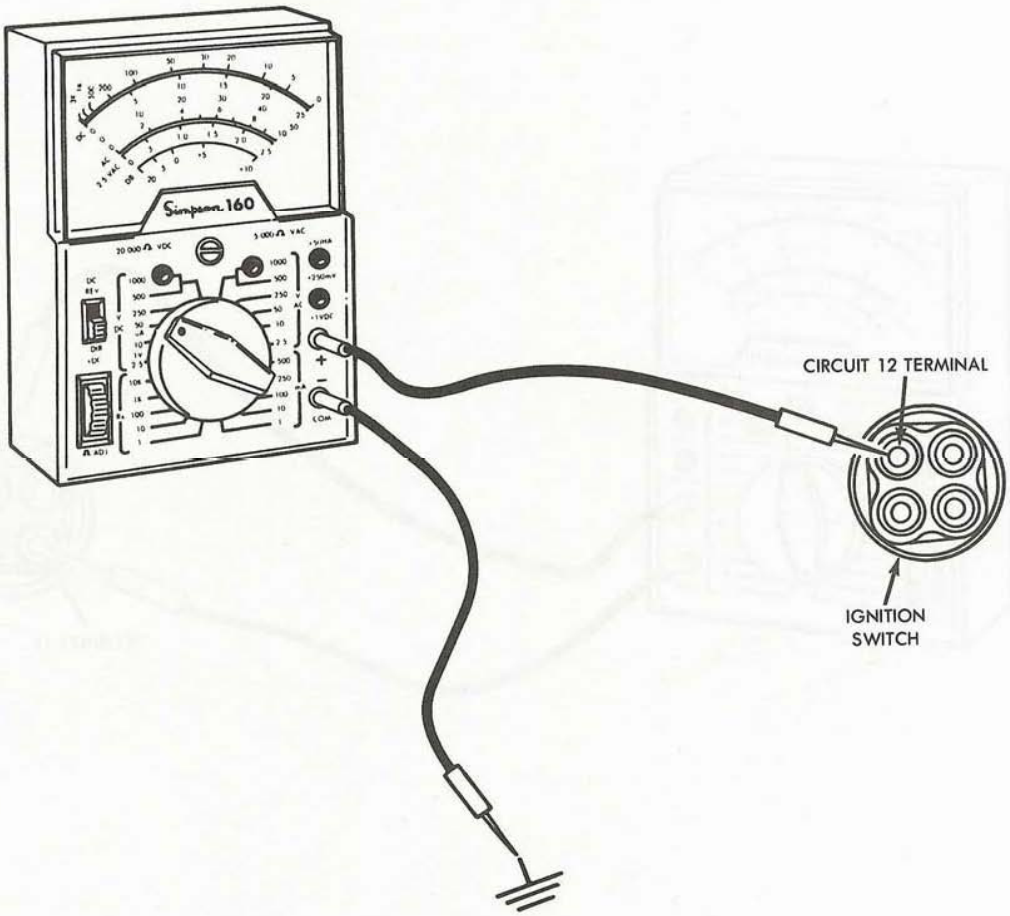

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Table 3-5. Electrical Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

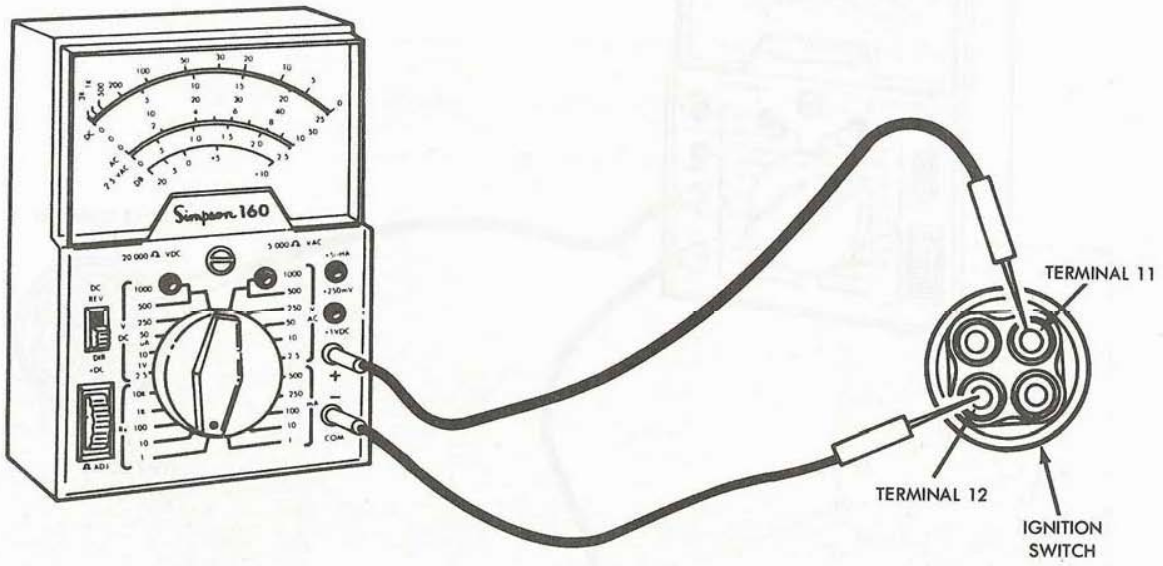
Test 5. Ignition switch continuity test.

Step 1. Disconnect circuit 11 and 12 connectors from ignition switch, and place switch to ON position.

Step 2. Set multimeter for RX1, connect positive lead to circuit 11 of ignition switch, and connect meter negative lead to circuit 12 of ignition switch.

a. If meter indicates infinite or high resistance, switch is defective. Place ignition switch in OFF position and replace ignition switch (para 5-71).

b. If meter indicates zero resistance, there is an open circuit between the ignition switch and the battery. Place ignition switch in OFF position and repair or replace circuit 11 wire (para 5-50).



END OF TESTING!

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Table 3-5. Electrical Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

2. ENGINE STARTS HARD OR STALLS EASILY (standard ignition)

NOTE

If STE/ICE is available, perform NG90 — ignition system tests (chapter 3, section VI).

Test 1. Breaker point resistance test.

Step 1. Install distributor adapter, connect multimeter to adapter and engine ground, and set to 50-volt range.

Step 2. Turn ignition switch to ON position, and crank engine intermittently until multimeter reads zero or very low value.

Step 3. Progressively switch multimeter to lower settings until a reading is obtained.

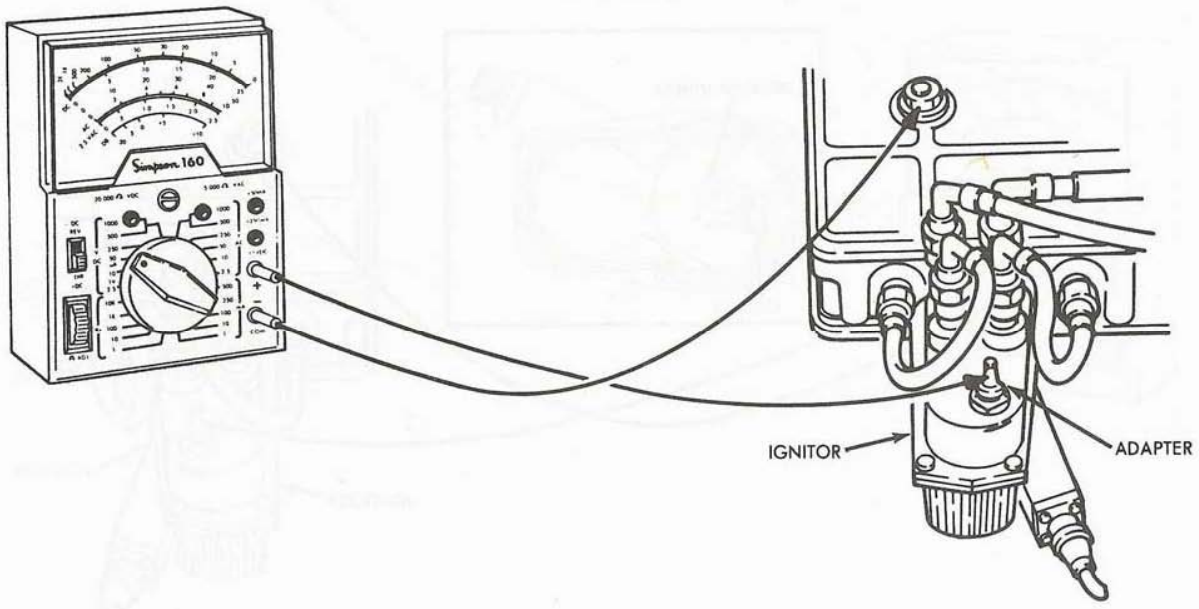
a. A reading of 0.2 volts or less indicates a normal primary circuit.

b. A reading of more than 0.2 volts indicates a poor distributor ground, or burned or pitted breaker points.

c. Turn ignition switch to OFF position.

d. Clean and tighten distributor ground or replace breaker point (para 5-7).

e. Test secondary circuit voltage. (malfunction 1, test 2).



END OF TESTING!

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Table 3-5. Electrical Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

3. ENGINE STARTS HARD OR STALLS EASILY (solid-state ignition)

NOTE

If STE/ICE is available, perform NG50 — power test fault isolation (chapter 3, section VI).

Test 1. Control module test.

Step 1. Install secondary circuit adapter on distributor.

Step 2. Set multimeter to 50-volt range.

Step 3. Connect meter positive lead to adapter terminal, and negative lead to ground.

Step 4. Turn ignition switch to ON position and observe multimeter.

a. If meter shows no voltage, switch to progressively lower scales until a reading is obtained.

b. If meter indicates any voltage less than 4.0 volts, connections are normal.

If multimeter indicates 24 volts, proceed to step 5.

Step 5. Rotate engine until a reading of 4 volts or less is obtained, or distributor rotor makes one complete revolution. If a reading of 4.0 volts or less cannot be obtained, turn ignition switch to OFF position and replace control module (para 5-6).

Step 6. Remove distributor cover and rotate engine until none of the trigger wheel teeth are alined with center of sensor. Install cover (para 5-4).

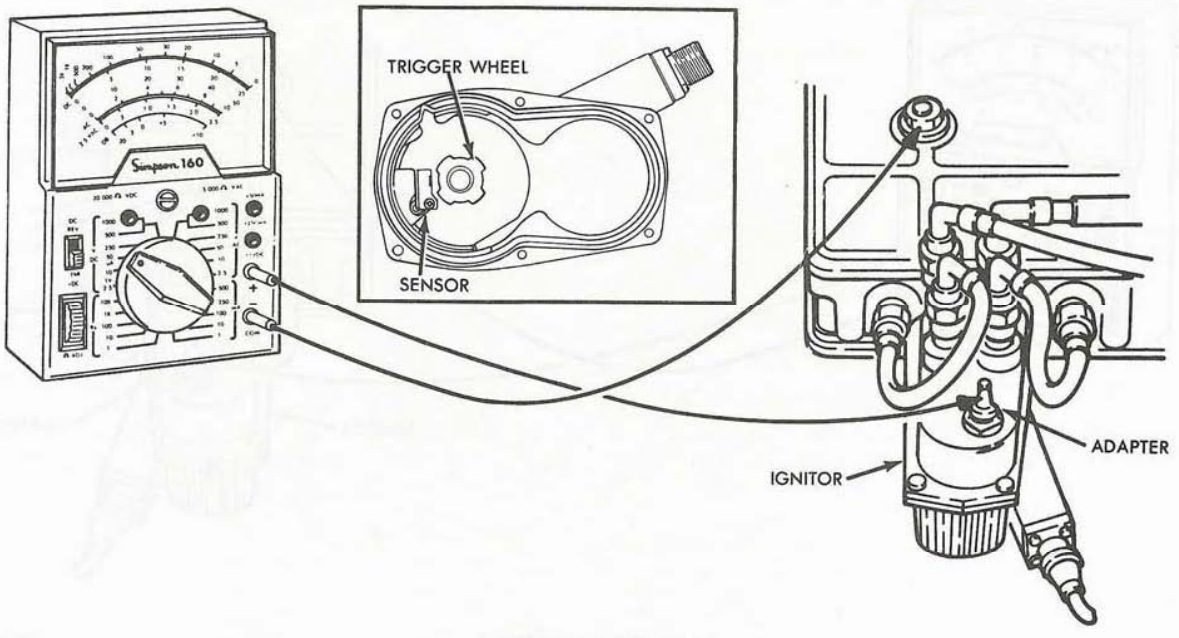

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Table 3-5. Electrical Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 7. Turn ignition switch to ON position and observe meter.

a. Meter should indicate battery voltage.

b. If no voltage is indicated, go to step 8.

Step 8. Remove the green lead from coil negative terminal and connect the meter positive lead to the negative terminal of the coil and the meter negative lead to ground. With ignition switch in ON position, observe meter.

If meter indicates battery voltage, turn ignition switch to OFF position and replace solid-state ignition kit components (para 5-6).

Step 9. After solid-state ignition kit components have been replaced, repeat step 8.

If battery voltage is not indicated, replace ignition coil kit components (para 5-9).

END OF TESTING!

4. ENGINE MISFIRES AT HIGH SPEED OR UNDER LOAD, OR IS HARD TO START (standard ignition)

NOTE

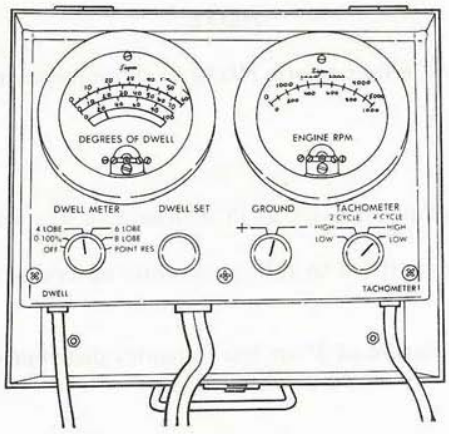
If STE/ICE is available, perform NG50 — power test fault isolation (chapter 3, section VI).

Test 1. Perform breaker point dwell test.

Step 1. Put ground switch in negative (-) position.

Step 2. Put dwell meter switch in 4 LOBE position. This selects 0-90° meter scale.

Step 3. Put tachometer switch in 4 cycle LOW position. This selects 0-1000 rpm range. For 0-5000 rpm range, set to 4 cycle HIGH position.



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